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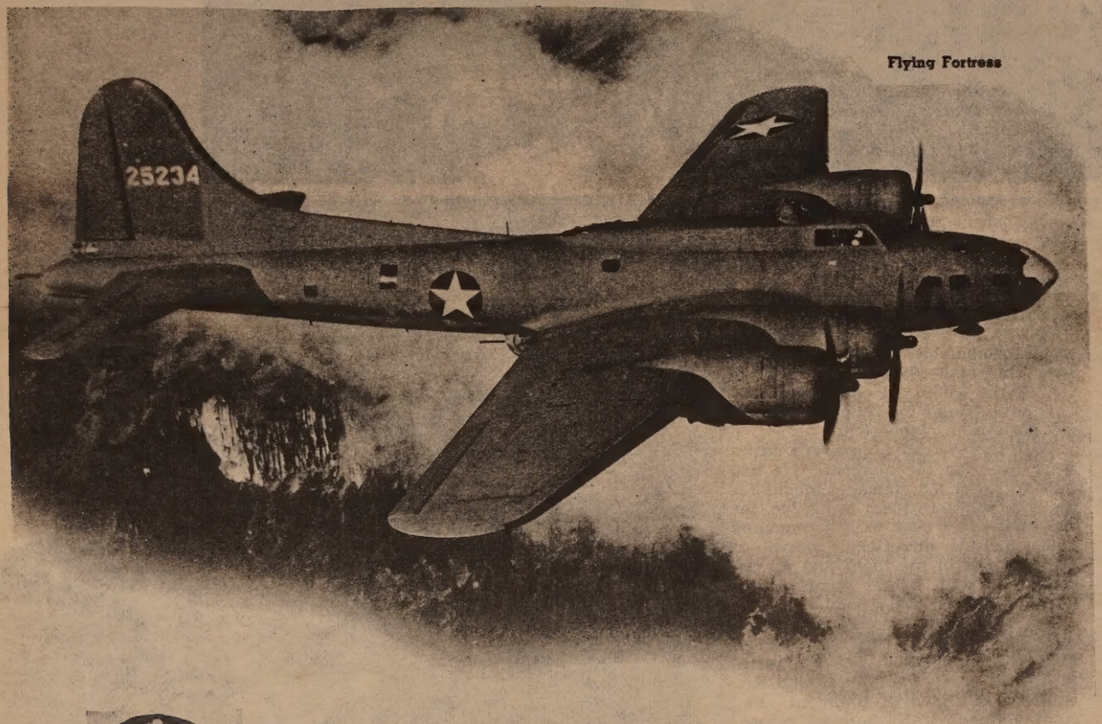
THE HORN SPEAKER

THE NEWPAPER FOR THE HOBBYIST OF VINTAGE ELECTRONICS AND SOUND

RADIO—ON A FLYING FORTRESS



Flying Fortress

The Author

by KENNETH R. PORTER

RADIO NEWS War Correspondent

The application of radio and the magnetic wire recorder in the actual bombing of a Nazi-held airdrome, as reported direct from England.

The "Jackie Ellen"

Shortly before the "Jackie Ellen" a Flying Fortress of the 8th U. S. Army Air Force took off from Britain to bomb Le Bourget Airfield just outside Paris, the writer made a check flight to find out what goes on over the communication system during a combat mission. It was evident then that even the fastest shorthand expert would be unable to write a word-for-word account of the flight. However, an Air Force officer with a magnetic wire recorder attached to the intercommunication system obtained a description of the operational flight in the actual words of the crew and observer-commentator.

THE radio operator in a Flying Fortress during a bombing mission is far from the most talkative gent in the crew—either in buzzer code or actual conversation. His job consists of little or no transmitter work while on the way to and from the target. In fact, radio silence is paramount in the precautions of a raiding party and only in an emergency is the key or talker opened. The radioman becames primarily a listener—and if he's in the lead ship he must be an exceptionally good one, too.

On the day of a mission the radio operator is briefed with the other enlisted gunners. Then radio men, like the navigators, attend a special briefing of their own. Here they are handed the flimsy, or radioman's kit for the day. The flimsy is a briefcase containing papers—a station and frequency chart, bomber code, "Q" signals, hours of the day, and certain maps, all of which are secret and sacred to the radio operator. His flimsy is as well-guarded as the bombardier's sight, or the navigator's papers, or the special escape kits.

But radio procedure differs in the European theater of operations—it is a combined USAAF-RAF radio procedure. So radio operators are grounded for several weeks when they first arrive in England to attend this combined radio-procedure school.

The radioman is also an expert gunner, for interdependence is vital to a B-17 crew. He has his own fifty calibre playing out of his top hatch. He can operate either the top or ball turret to replace these gunners in an emergency. Since he is the only man in the ship who can see the waist gunners (through his half door) he "guards" them. The ball turret man depends on the waist gunners to free stuck mechanisms, feed him ammunition and do other related duties. The tail gunner is also a responsibility of the waist men.

The most important position of all for a radio operator, however, is in the lead ship. Here he must intercept every message from his home base, for other aircraft following in the flight depend on the leader to keep to a correct course. If the radio operator fails to hear a message calling the flight back or detailing it to another target, it might find itself flying alone or leading the other ships astray. With such vital information crackling on the receiver, and being unable to see what is going on, radio men often become so detached from the activity around them that even severe enemy action goes unnoticed. It has been known for them to return from missions in planes riddled to almost total destruction, to discover the damage only after landing.

Closed off in a tiny, closely curtained compartment, concentrating on the radio receiver rather than the interphone, the operator often misses the battle entirely. He can hear shots behind and around him, hear his own turrets firing in reply, feel the plane buck and lurch—which might be enemy flak, cannon hits, or just plain evasive action—he's never sure which.

In preparation for the flight which was to become the first on-the-spot account of what actually goes on inside an American heavy bomber, a small portable recording device known as a magnetic wire recorder, was installed in the observers' compartment and plugged into the intercommunication system. In addition to the regular crew of ten, Major Howard L. Nussbaum, former New York radio network executive and now Radio Public Relations Officer of the E.T.O., was to go along and record his own description of the flight.

Major Howard L. Nussbaum showing the magnetic wire recorder to Gen. Arnold, Commandant of the U. S. Army Air Forces.

The plane used was the *Jackie Ellen*, so christened by the bombardier, Lt. Walter Z. Morey, of Manchester, New Hampshire, an expectant papa who explained, "if it's a boy we'll name him Jackie; if it's a girl it'll be Ellen."

Painted on the nose of this bomber were nineteen yellow, red and blue miniature bombs, indicating that it had made that many missions over enemy territory—ten over France, eight over Germany and one over Belgium. It was manned by the oldest complete living combat crew in the "clay pigeon" squadron.

There was nothing unusual in the briefing of the crew the day of this particular flight. The men knew they were to bomb Le Bourget airfield just outside Paris and they had been informed about the magnetic wire recorder attached to the intercom. They were also aware that they were participants in a unique experiment which might prove of great tactical value in future bombings.

After the briefing, T/Sgt. Joseph C. Bocelli, Philadelphia, Pa., radio operator of the *Jackie Ellen*, entered the radio compartment and started his log: "On watch—0810 hours," he wrote . . . "have tested all equipment—OK . . . have tested interphone from every position in plane—OK. . . ."

With this the radio operator's duties were over for the moment. He had only to listen for messages meant for his ship and note them in his log, for the pilot takes over with a command radio for the directional control of other planes in the flight and for coordination with fighter escort or for liaison with the other bombers.

The balance of the crew, consisting of S/Sgt. Walter D. Sherrill, Rock Island, Ill., tail gunner, S/Sgt. Charles A. Adams, Cheltenham, Pa., and S/Sgt. William R. Earnest, Delmont, Pa., right and left waist gunners respectively, S/Sgt. Francis W. Pulliam, Greeley, Colo., ball turret gunner, T/Sgt. Gus Riecke, Trinidad, Cal., upper turret gunner, Lt. Walter Z. Morey, bombardier, Lt. C. A. Alexander, Manlius, N.Y., navigator, Major Nussbaum, observer, and Lt. Douglas H. White, Fort Worth, Texas, co-pilot, all checked in over the interphone to pilot Captain Thomas F. Witt, of Cookville, Texas, and the plane took off in regular formation on its history-making flight.

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Demonstrating the oxygen mask with built-in microphone. The wire recorder had its first trial on the "Jackie Ellen" which was attacked 10 times during the flight.

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The radio man sat back on his parachute pack, loosened his "Mae West," relaxed and listened. Over the intercom came the voices of the crew and observer-commentator as the ship sped towards the continent to bomb the Nazi-held airfield:

Nussbaum: "It's now 8:20. Zero hour is at 8:45. In exactly twenty-five minutes, at zero hour, every plane, every bomber, every fighter on this operational mission. . . ."

Pilot: "Pilot to tail gunner. Check your glasses and see if you can get the number of that aircraft to the right of us."

Tail gunner: "Tail gunner. Roger. Four two eight. . . . I think it is four two eight. Roger."

Pilot: "Thank you. Roger."

Nussbaum: "As I said, at 8:45, which is in about twenty-five minutes, all the planes on this mission, whether they be bombers or fighters, will be in the air on the way to the target. That is known as zero hour. I can now see the wing ahead of us. It is in perfect formation. They are scheduled to go into the target two minutes ahead of us. We have not as yet made our rendezvous with our fighter escort."

Bombardier: "Altitude 10,000 feet. Put on your oxygen masks. We are at oxygen level."

Tail gunner: "Tail gunner. Roger."

Nussbaum: "As you can hear, we are going on oxygen now. I have just put on my mask, and it may make my voice sound somewhat muffled. Crews generally go on oxygen at around 10,000 feet. The pilot will check the crew every 10,000 feet altitude or so to make sure the men are still on oxygen and are all right. It is now exactly 8:48, and we are somewhere over the English channel. In just two minutes we are to rendezvous with the fighter escort, all P47 Thunderbolts — the bomber crew's best friend. The navigator is working over his maps closely now. That rendezvous is desperately important. If we are too early for it, our Thunderbolts might never find us, and if we're late, they'll use up all their gas circling and waiting for us, and won't be able to take us as far as Paris.

"We're right on the nose! Three huge formations of Thunderbolts are swooping down on us from the northwest. They're a good deal higher than we are. That is precision timing for you, especially when you remember that these Thunderbolts took off from different air fields ten or fifteen minutes ago, rendezvoused first with each other, and then came out here to meet us, at a precise time when we would be passing a given pin point on the map. The time is exactly 9:02. We are at bombing altitude. . . ."

Pilot: "Calling all to man your guns!"

Bombardier: "Bombardier to navigator—man your guns!"

Nussbaum: "We are now flying over enemy territory. Our parachutes have been adjusted. We have put on helmets to catch any flak that might be coming our way."

Crossing into enemy territory the radio operator checked his equipment to see that he had complete radio silence and noted it in his log.

Bombardier: "Bombardier to pilot—go ahead."

Pilot: "Go ahead."

By means of a small microphone which fits over the lip, and inside the oxygen mask, the operator was able to record his observations of a complete mission.

Bombardier: "I'm going back to pull the pins out of the bombs now."

Pilot: "Roger."

Nussbaum: "That was the bombardier to the pilot. He is now leaving the bombardier's compartment and going back to pull the pins from the bombs. We are getting ready for business."

Bombardier: "That guy at twelve o'clock seems to be hit!"

Pilot: "Pilot—Roger—Roger."

The ground and flying crews of the Flying Fortress "Jackie Ellen."

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Here the *Jackie Ellen* became engaged in the first contact with the enemy on this flight. Anti-aircraft batteries opened up on them from several quarters.

Nussbaum: "The flak is coming up. . . . this is certainly flak-infested. . . ."

Right waist gunner: "Flak 4:30 high!"

Top turret gunner: "There! Four fighters right above us—four fighters!"

Pilot: "Are they 47's?"

Top turret gunner: "Yes, sir, they're 47's."

Pilot: "OK."

Nussbaum: "We are nearing the target. We can see the field from here, and just beyond that we can see Paris itself. We are getting some very bitter and determined opposition. They're giving us just about everything they have. . . ."

Top turret gunner: ". . . . . Something around, I think."

Pilot: "Cut the fussing around and get on the ball!"

Another field of flak spread out beneath them and the *Jackie Ellen* tossed and pitched like a bucking bronco.

Top turret gunner: "Enemy eleven o'clock level."

Nussbaum: "We are being attacked! We're being attacked! A Focke-Wulf 190 is coming in on us."

Pilot: "Get at your guns! Get at your guns!"

Nussbaum: "The guns are going—a Folke Wulf came in at about eleven thirty."

Pilot: "Report. Report."

Tail gunner: "Tail gunner—Roger."

Left waist gunner: "Left waist gunner—Roger."

Right waist gunner: "Right waist gunner—Roger."

Ball turret gunner: "Ball turret—Roger."

Radio operator: "Radio—Roger."

Navigator: "Bombardier navigator—Roger."

Pilot: "OK boys, keep your eyes open now."

Bombardier: "At twelve o'clock level there seems to be something burning—some plane or something."

Tail gunner: "Flak six o'clock! Six o'clock level."

Bombardier: "Bomb bay doors being opened."

Pilot: "OK. Open bomb bay doors."

Right waist gunner: "Three 47's at three o'clock high."

Nussbaum: "Our bomb bay doors are open."

Pilot: "Roger."

Top turret gunner: "There's something at twelve o'clock high."

Bombardier: "Don't bother me now, please! On the level there, boy, please!"

Nussbaum: "The bombardier is working with his Bomb Sights now. There's been a lot of flak. Our pilot has been taking evasive action. The bombardier wants the ship—he needs the ship level—we're levelling off. The flak is really coming up—some more bursts! The sky is . . . . the sky is just black with little puffs of smoke."

Bombardier: "Bombs away!"

Nussbaum: "The bombardier has just dropped his bombs and we are taking a wide turn to try to avoid the flak. We will be going due east now."

Tail gunner: "Watch there — one o'clock low—some enemy fighters!"

Nussbaum: "We are directly above Paris now."

Right waist gunner: "Flak four o'clock low! Flak four o'clock low!"

Nussbaum: "Paris is just about four miles directly below. There is not a cloud between us and the ground. I can see the Eiffel Tower. . . ."

Bombardier: "Where?"

Nussbaum: "Right out there just about one o'clock—see?"

Bombardier: "Yes, that's what it is!"

Navigator: "Attack! Attack!—One o'clock!"

Nussbaum: "We are being attacked—there go our guns! It was an ME 109, a Messerschmidt 109. It came in at eleven o'clock right to the left of our nose. It swooped down on us, and under as our guns fired. If we missed him, the ball turret gunner got his chance, I guess."

At this point the radio operator decided to join the battle. He wrote in his log: "Off watch," closed his set and manned the fifty-calibre gun in the ceiling of his compartment.

When a radio operator engages in the battle as a gunner he must also keep constant vigil on his receiver for code signals come in at regular intervals and he must intercept and record them in the log.

RADIO-CRAFT March, 1932

Operating Notes

The Analysis of Radio Receiver Symptoms

After nearly four hours in the air with their mission successfully accomplished, the *Jackie Ellen* and her crew headed back to their base. Direct hits had been scored on the target and a total of thirty-seven enemy planes were knocked down by the entire flight.

Such phrases as "nine o'clock" and "eleven o'clock" used by the crew during their battle, indicate the direction from which enemy fighters were attacking. The use of the word "Roger" is a radio procedure term of acknowledgment, such as the expression, "OK," meaning everything is all right.

The entire crew was wearing oxygen masks, and with the exception of the observer - commentator, all the men used throat microphones. These can pick up only the individual's speech. A tiny lip microphone, enclosed in his oxygen mask, was used by the observer-commentator.

On the trip home the radio operator switched his automatic gadgets back on and tuned in a little dance music for the interphones while the crew unplugged oxygen lines and heating cables. The balance of the flight was uneventful.

Had the sky been cloudy on their return the radioman might have found himself a great deal busier, for after such battles planes usually become lost from their group and their course. In such weather the navigator cannot get a fix by celestial navigation or from his compass or maps. Then it's the job of the radio operator to take a chance on breaking radio silence to get a radio fix. This is done by working from the flimsy list of stations and frequencies, sending out the signal for a fix.

On long missions deep into Europe, Fortresses and Liberators sometimes land at the nearest airdrome to the English coast. Getting the ship into a strange airport is another responsibility of the radio man.

Back home the ship lands. The radio operator finishes his log for the flight: "Equipment OK, except for faulty interphone cables leading to tail gunner," or whatever flaws might have been found in radio, interphone, or other power cables. Then he signs: "Off watch — 1224 hours," with his name and rank affixed.

He gathers up his precious flimsy and log, attends the regular crew interrogation and his radio operator's interrogation where he is questioned on incidents of the flight. Finally he turns in his flimsy and log and goes to the mess for a drink from the pot of ever-waiting black coffee.

—30—

RADIO NEWS January, 1944

By BERTRAM M. FREED

DURING the past season, a great number of new radio receivers made their appearance. Almost every reputable manufacturer released at least one receiver employing the superheterodyne circuit, variable-mu and pentode tubes, tone control and automatic volume-control. Although these advanced features resulted in far better radio receivers, their use brought their attendant difficulties. On the other hand, many problems have arisen because of certain common failures of component parts.

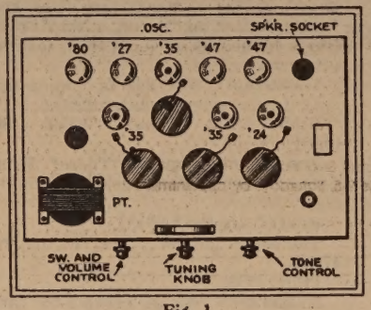

Fig. 1

Socket arrangement of the Colonial 47 receiver. Three variable-mu tubes are used.

Colonial Model 47

In the Colonial Model 47, a superheterodyne receiver, the condition of unstable operation accompanied with the complaint of poor tone at moderate volume has been found to be caused by the misplacement of the screen-grid tubes. Three variable-mu type '35 tubes are used in this receiver as well as one type '24 as a second-detector. When a '35 is placed in the second-detector stage, the above complaint will ensue. This tube will not function properly as a detector in a T.R.F. receiver, or second-detector in a superheterodyne, because of its electrical characteristics. The socket arrangement of the Colonial 47 is illustrated in Fig. 1.

Reception on this model is often marred by hum, slight in some cases, and in others quite disturbing. This condition is not caused by any defective part. Its presence can only be attributable to poor mechanical design, resulting in interstage coupling.

Stromberg-Carlson Models 25, 26

Some time ago, an interesting problem was presented by a Stromberg-Carlson Model 25, 26 receiver. The complaint was "intermittent reception." After the set had been in use for a few minutes, it would suddenly go "dead." When the line switch was snapped off and then on again, reception would be resumed. On other occasions, the receiver would stop and start up again without anyone having disturbed it in the least. A thorough check disclosed a lack of plate voltage on the screen-grid detector. The chassis was taken down in an attempt to locate the trouble.

The primary of the input push-pull audio transformer was tested but this winding proved O. K. (Besides, if the primary had been open, a voltage reading would have been obtained at the detector plate, because of the 250,000-ohm carbon resistor shunted across the winding as a loading device, since the plate impedance of the screen-grid tube as a detector is high.) The 40,000-ohm carbon resistor used to reduce the high voltage to that required by the detector, was suspected, but this also proved correct when a resistance measurement was made.

A "short" test made from detector plate to chassis produced only a very high resistance effect, apparently pointing to no trouble on this point. With the receiver turned on, voltage measurements were made from the "B+" side of the primary. This showed 20 volts, but the reading obtained from the high "B+" terminal of the voltage divider,

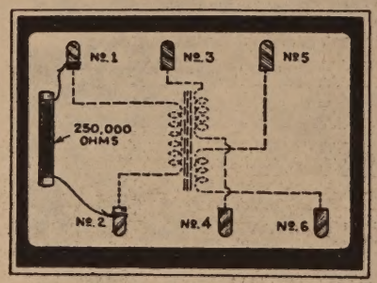

Fig. 2

The primary of the transformer shorted to ground under load, causing poor reception.

compared with that on the voltage chart for this receiver, showed a discrepancy of about 40 volts. The 40,000-ohm detector series-resistor was unsoldered from the lug on the condenser block and the voltage jumped to slightly above normal.

This lead to the conclusion that some part of the detector-plate circuit was shorting to the chassis or "B—," even though the "short" test did not indicate the defect. The resistor was replaced and the lead to the "B+" terminal of the input transformer, marked No. 1 in Fig. 2, was disconnected. The correct voltage was obtained at the wire; but as soon as it was placed back on the terminal, the voltage dropped to 20. These results pointed either to a shorting primary, or a leaky or otherwise faulty by-pass condenser (.0001-mf.) located within the R.F. choke housing.

To determine the guilty member, the lead from terminal No. 2 on the transformer was removed and the voltage found at this terminal was zero. To further check the unit, the primary was entirely disconnected, but the 250,000-ohm shunt resistor was left in the circuit. Although the required 200 volts was not impressed on the detector plate, a sufficient reading was obtained to warrant the assumption that the primary of the transformer shorted to either the core or the casing, in some way, *under load.* Similar failures in subsequent receivers of the same model were easily detected and a repair speedily effected by replacement of the transformer.

Many cases of noisy reception have been reported on the Stromberg-Carlson Models 25, 26. In most instances, the trouble has been traced to a noisy primary of the push-pull input A.F. transformer. This condition will evidence itself even with the detector tube removed. It seems that the unusually large primary winding, so made to match the high impedance of the screen-grid detector plate, has resulted in many breakdowns. Perhaps the best method for determining positively whether the primary is at fault is to disconnect the primary and use the 250,000-ohm shunt resistor in conjunction with a .06- or .1-mf. condenser connected as shown in Fig. 3. It is not advisable that this procedure be used as a permanent repair as the quality of reproduction will suffer considerably.

A frequent cause for an inoperative Stromberg-Carlson Model 25, 26 lies with the bolt that protrudes from the chassis, which bites into a section of the voltage divider. This bolt should be cut down or replaced with one that is shorter.

Atwater Kent Models 83, 85

Often, the complaint of poor tone, low volume, and little response when the tone

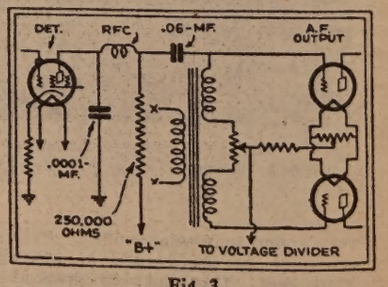

Fig. 3

Determining faulty transformers by using the circuit as an impedance-coupled stage.

OPERATING NOTES

control is set for bass reproduction, is received on the Atwater Kent Models 83 and 85. After a great deal of testing and checking, *made more difficult by the fact that the schematic diagrams were unavailable* (these circuits appear in the "OFFICIAL RADIO SERVICE MANUAL, VOL. II."—*Tech. Ed.*), the trouble was finally traced to an open choke in the pentode control-grid circuit. (This choke connects to one of the leads from the tone-control switch.) What role this choke plays is difficult to state for when it was shorted out, the receiver performed as it had never done before. This portion of the Models 83 and 85 is illustrated in Fig. 4.

The alignment condensers of these two receivers are located on top of the coils, beneath the coil shields, and to attempt an adjustment of them would necessitate removal of the shields, a procedure that does not make for accuracy. As the shield cans are all of the same size, a duplicate may be secured for service purposes with several holes drilled in the top to permit the insertion of the adjusting screw-driver. When alignment is necessary, this shield can is to be substituted for the one ordinarily used.

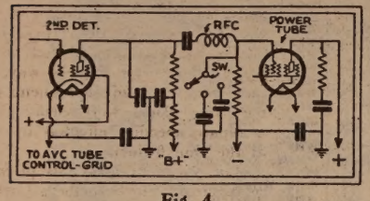

Fig. 4

The detector circuit showing the location of the RFC which caused trouble.

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Radio News for April, 1926

List of Broadcast Stations in the United States

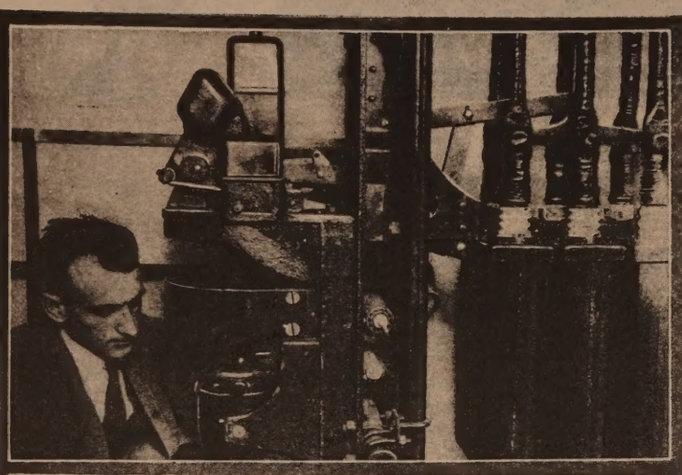
Radio Call Letter	BROADCAST STA. Location	Wave (Meters)	Power (Watts)
WKAR	East Lansing, Mich	285.5	1000
WKAV	Laconia, N. H.	224	50
WKBB	Joliet, Ill.	214.2	100
WKBE	Webster, Mass.	231	1000
WKBG	Chicago, Ill.	215.7	100
WKRC	Cincinnati, Ohio	325.9	1000
WKY	Oklahoma City, Okla.	375	100
WLAL	Tulsa, Okla.	250	100
WLAP	Louisville, Ky.	275	20
WLB	Minneapolis, Minn.	278	500
WLBL	Stevens Point, Wis.	278	500
WLIB	Elgin, Ill	302.8	2500
WLIT	Philadelphia, Pa.	394.5	500
WLS	Crete, Ill.	344.6	1500
WLSI	Cranston, R. I.	440.9	500
WLTS	Chicago, Ill.	258	100
WLW	Harrison, Ohio	422.3	500-5000
WLWL	New York, N. Y.	288.3	1500
WMAC	Cazenovia, N. Y.	275	100
WMAF	Dartmouth, Mass.	440.9	1000
WMAK	Lockport, N. Y.	266	500
WMAL	Washington, D. C.	212.6	15
WMAN	Columbus, Ohio	278	50
WMAQ	Chicago, Ill.	447.5	1000
WMAY	St. Louis, Mo.	248	100
WMAZ	Macon, Ga.	261	500
WMBB	Chicago, Ill.	250	500
WMBC	Detroit, Mich.	256.4	100
WMBF	Miami Beach, Fla.	384.4	500
WMC	Memphis, Tenn.	499.7	500
WMCA	Hoboken, N. J.	340.7	500
WNAA	Arlington, Va.	434.5	1000
WNAB	Boston, Mass.	250	100
WNAC	Boston, Mass.	280.2	500
WNAD	Norman, Okla.	254	250
WNAL	Omaha, Nebr.	258	50
WNAT	Philadelphia, Pa.	250	100
WNAX	Yankton, S. Dak.	244	100
WNBH	New Bedford, Mass.	248	250
WNJ	Newark, N. J.	252	150
WNOX	Knoxville, Tenn.	268	100
WNYC	New York, N. Y.	526	1000
WOAI	San Antonio, Tex.	394.5	2000
WOAN	Lawrenceburg, Tenn.	282.8	500
WOAW	Omaha, Nebr.	526	1000
WOAX	Trenton, N. J.	240	500
WOC	Davenport, Iowa	483.6	5000
WOCG	Sycamore, Ill.	205.4	10
WOCL	Jamestown, N. Y.	275	15
WODA	Paterson, N. J.	224	250
WOI	Ames, Iowa	270	750
WOK	Homewood, Ill.	217.3	500
WOKO	New York, N. Y.	233	50
WOO	Philadelphia, Pa.	508.2	500
WOOD	Grand Rapids, Mich.	242	100
WOQ	Kansas City, Mo.	278	1000
WOR	Newark, N. J.	405.2	500
WORD	Batavia, Ill.	275	5000
WOS	Jefferson City, Mo.	440.9	500
WOWL	New Orleans, La.	270	10
WOWO	Fort Wayne, Ind.	227	500
WPAK	Agricultural Col., N. Dak	275	50
WPCC	Chicago, Ill.	258	500
WPG	Atlantic City, N. J.	299.8	500
WPRC	Harrisburg, Pa.	215.7	100
WPSC	State College, Penna.	261	500
WQAA	Parkesburg, Pa.	220	500
WQAE	Springfield, Vt.	246	50
WQAM	Miami, Fla.	263	100
WQAN	Scranton, Pa.	250	100
WQAO	New York, N. Y.	360	100
WQJ	Chicago, Ill.	447.5	500
WRAF	Laporte, Ind.	224	100
WRAK	Escanaba, Mich.	256	100
WRAM	Galesburg, Ill.	244	100
WRAV	Yellow Springs, Ohio	263	100
WRAW	Reading, Pa.	238	10
WRAX	Gloucester City, N. J.	268	500
WRBC	Valparaiso, Ind.	278	50
WRC	Washington, D. C.	468.5	1000
WRCO	Raleigh, N. C.	252	100
WREC	Coldwater, Miss.	254	10
WREO	Lansing, Mich.	285.5	500
WRHM	Minneapolis, Minn.	252	50
WRK	Hamilton, Ohio	270	100
WRM	Urbana, Ill.	273	500
WRNU	Richmond Hill, N. Y.	236	100
WRNY	New York, N. Y.	258.5	500
WRR	Dallas, Tex.	246	500
WRST	Bay Shore, N. Y.	215.7	250
WRVA	Richmond, Va.	258	1000
WRW	Tarrytown, N. Y.	273	500
WSAI	Mason, Ohio	325.9	5000
WSAJ	Grove City, Pa.	229	250
WSAN	Allentown, Pa.	229	100
WSAR	Fall River, Mass.	254	100
WSAU	Chesham, N. H.	229	10
WSAX	Chicago, Ill.	268	100
WSAZ	Pomeroy, Ohio	244	50
WSB	Atlanta, Ga.	428.3	1000
WSBC	Chicago, Ill.	209.7	500
WSBF	St. Louis, Mo.	273	250
WSBT	South Bend, Ind.	275	250
WSDA	New York, N. Y.	263	250
WSKC	Bay City, Mich.	261	100
WSM	Nashville, Tenn.	282.8	1000
WSMB	New Orleans, La.	319	500
WSMH	Owosso, Mich.	240	20
WSMK	Dayton, Ohio.	275	500
WSOE	Milwaukee, Wis.	246	500
WSRO	Hamilton, Ohio.	252	100
WSUI	Iowa City, Iowa	483.6	500
WTAB	Fall River, Mass.	266	100
WTAC	Johnstown, Pa.	268	100
WTAD	Carthage, Ill.	236	50
WTAG	Worcester, Mass.	268	500
WTAL	Toledo, Ohio.	252	10
WTAM	Cleveland, Ohio	389.4	3500
WTAP	Cambridge, Ill.	242	50
WTAQ	Osseo, Wis.	254	100
WTAR	Norfolk, Va.	261	100
WTAS	Elgin, Ill.	302.8	2500
WTAW	College Station, Texas	270	500
WTAX	Streator, Ill.	231	50
WTAZ	Lambertville, N. J.	261	15
WTIC	Hartford, Conn.	348.6	500
WWAD	Philadelphia, Pa.	250	250
WWAE	Plainfield, Ill.	242	500
WWAO	Houghton, Mich.	263	250
WWGL	Richmond, Hill, N. Y.	212.6	500
WWI	Dearborn, Mich.	266	500
WWJ	Detroit, Mich.	352.7	1000
WWL	New Orleans, La.	275	100

Radio Call Letter	BROADCAST STA. Location	Wave (Meters)	Power (Watts)
KDKA,	East Pittsburgh, Pa.	309.1	Var.
KDLR,	Devils Lake, N. D.	231	5
KDPM,	Cleveland, Ohio	250	500
KDYL,	Salt Lake City, Utah	246	50
KDZB,	Bakersfield, Calif.	209.7	100
KFAB,	Lincoln, Neb.	340.7	1000
KFAD,	Phoenix, Ariz.	273	100
KFAF,	San Jose, Calif.	217.3	50
KFAJ,	Boulder, Colo.	261	100
KFAU,	Boise, Idaho	280.2	750
KFBB,	Havre, Mont.	275	50
KFBC,	San Diego, Calif.	224	10
KFBK,	Sacramento, Calif.	248	100
KFBL,	Everett, Wash.	224	100
KFBS,	Trinidad, Colo.	238	15
KFBU,	Laramie, Wyo.	270	50
KFCB,	Phoenix, Ariz.	238	100
KFDD,	Boise, Idaho	278	50
KFDM,	Beaumont, Tex.	315.6	500
KFDX,	Shreveport, La.	250	100
KFDY,	Brookings, S. Dak.	273	100
KFDZ,	Minneapolis, Minn.	231	10
KFEC,	Portland, Ore.	248	50
KFEL,	Denver, Colo.	254	50
KFEQ,	Oak, Nebr.	268	500
KFEY,	Kellogg, Idaho	233	10
KFFP,	Moberly, Mo.	242	50
KFFY,	Alexandria, La.	275	50
KFGC,	Baton Rouge, La.	268	100
KFGH,	Stanford Unl., Calif.	270	500
KFGQ,	Boone, Iowa	226	10
KFH,	Wichita, Kans.	268	50
KFHA,	Gunnison, Colo.	252	50
KFHL,	Oskaloosa, Iowa	240	10
KFI,	Los Angeles, Calif.	468.5	3000
KFIF,	Portland, Ore.	248	100
KFIQ,	Yakima, Wash.	256	100
KFIU,	Juneau, Alaska	226	10
KFIZ,	Fond du Lac, Wis.	273	100
KFJB,	Marshalltown, Iowa	248	10
KFJC,	Junction City, Kansas	218.8	10
KFJF,	Oklahoma City, Okla.	261	500
KFJI,	Astoria, Ore.	246	10
KFJM,	Grand Forks, N. Dak.	278	100
KFJR,	Portland, Ore.	263	50
KFJX,	Cedar Falls, Iowa	258	50
KFJY,	Fort Dodge, Iowa	246	50
KFJZ,	Fort Worth, Tex.	254	50
KFKA,	Greeley, Colo.	273	50
KFKU,	Lawrence, Kans.	275	500
KFKX,	Hastings, Nebr.	288.3	5000
KFKZ,	Kirksville, Mo.	266	10
KFLR,	Albuquerque, N. Mex.	254	100
KFLU,	San Benito, Tex.	236	10
KFLV,	Rockford, Ill.	229	100
KFLX,	Galveston, Tex.	240	10
KFLZ,	Atlantic, Iowa	273	100
KFMQ,	Fayetteville, Ark.	299.8	750
KFMR,	Sioux City, Iowa	261	100
KFMW,	Houghton, Mich.	263	50
KFMX,	Northfield, Minn.	336.9	500
KFNF,	Shenandoah, Iowa	263	500
KFOA,	Seattle, Wash.	454.3	500
KFOB,	Burlingame, Calif.	226	50
KFOJ,	Moberly, Mo.	242	10
KFON,	Long Beach, Calif.	233	500
KFOO,	Salt Lake City, Utah	236	250
KFOR,	David City, Nebr.	226	100
KFOT,	Wichita, Kans.	231	50
KFOX,	Omaha, Nebr.	248	100
KFOY,	St. Paul, Minn.	252	50
KFPL,	Dublin, Texas	252	15
KFPM,	Greenville, Texas	242	10
KFPR,	Los Angeles, Calif.	231	500
KFPW,	Carterville, Mo.	258	20
KFPY,	Spokane, Wash.	266	100
KFQA,	St. Louis, Mo.	261	100
KFQB,	Fort Worth, Texas	263	1000
KFQP,	Iowa City, Iowa	224	10
KFQU,	Alma (Holy City) Calif.	217.3	100
KFQW,	North Bend, Wash.	215.7	50
KFQZ,	Hollywood, Calif.	226	50
KFRB,	Beeville, Tex.	248	250
KFRC,	San Francisco, Calif.	268	50
KFRU,	Columbus, Mo.	499.7	500
KFRW,	Olympia, Wash.	218.8	50
KFSG,	Los Angeles, Calif.	275	500
KFUJ,	Breckenridge, Minn.	242	50
KFUL,	Galveston, Tex.	258	50
KFUM,	Colorado Springs, Colo.	242	100
KFUO,	St. Louis, Mo.	545.1	500
KFUP,	Denver, Colo.	234	50
KFUR,	Ogden, Utah	224	50
KFUS,	Oakland, Calif.	256	50
KFUT,	Salt Lake City, Utah	261	100
KFUU,	Oakland, Calif.	220	50
KFUV,	Springfield, Mo.	252	10
KFVD,	San Pedro, Calif.	205.4	50
KFVE,	St. Louis, Mo.	240	500
KFVG,	Independence, Kansas	236	10
KFVH,	Manhattan, Kansas	218.8	15
KFVI,	Houston, Texas	240	10
KFVN,	Welcome, Minn.	227	50
KFVR,	Denver, Colo.	244	50
KFVS,	Cape Girardeau, Mo.	224	50
KFVW,	San Diego, Calif.	246	500
KFVY,	Albuquerque, N. Mex.	250	10
KFWA,	Ogden, Utah	261	500
KFWB,	Hollywood, Calif.	252	500
KFWC,	Upland, Calif.	211.1	50
KFWD,	Arkadelphia, Ark.	266	500
KFWF,	St. Louis, Mo.	214.2	250
KFWH,	Chico, Calif.	254	100
KFWI,	So. San Francisco, Calif.	226	500
KFWM,	Oakland, Calif.	206.8	500
KFWO,	Avalon, Calif.	211.1	250
KFWU,	Pineville, La.	238	100
KFWV,	Portland, Ore.	212.6	50
KFXB,	Big Bear Lake, Calif.	202.6	500
KFXC,	Santa Maria, Calif.	209.7	100
KFXD,	Logan, Utah	205.4	10
KFXF,	Colorado Springs, Colo.	250	500
KFXH,	El Paso, Texas	242	50
KFXJ,	Denver, Colo.	215.7	10
KFXM,	Beaumont, Texas	227	10
KFXY,	Flagstaff, Ariz.	205.4	50
KFYF,	Oxnard, Calif.	205.4	10
KFYJ,	Houston, Texas	238	10
KFYR,	Bismarck, N. Dak.	248	10
KGB,	Tacoma, Wash.	250	100
KGO,	Oakland, Calif.	361.2	4000
KGTT,	San Francisco, Calif.	206.8	50
KGU,	Honolulu, Hawaii	270	500
KGW,	Portland, Ore.	491.5	500
KGY,	Lacey, Wash.	246	50
KHJ,	Los Angeles, Calif.	405.2	500
KHQ,	Spokane, Wash.	273	500
KJBS,	San Francisco, Calif.	220	5
KJR,	Seattle, Wash.	384.4	1000
KLDS,	Independence, Mo.	440.9	1000
KLS,	Oakland, Calif.	252	250
KLX,	Oakland, Calif.	508.2	500
KLZ,	Denver, Colo.	266	250
KMA,	Shenandoah, Iowa	252	500
KMJ,	Fresno, Calif.	234	50
KMO,	Tacoma, Wash.	250	100
KMTR,	Los Angeles, Calif.	238	500
KNRC,	Los Angeles, Calif.	208.2	250
KNX,	Los Angeles, Calif.	336.9	500
KOA,	Denver, Colo.	322.4	5000
KOAC,	Corvallis, Ore.	280.2	50
KOB,	State College, N. M.	348.6	1000
KOCH,	Omaha, Neb.	258	250
KOCW,	Chickasha, Okla.	252	200
KOIL,	Council Bluffs, Iowa	278	500
KOWW,	Walla Walla, Wash.	256	500
KPO,	San Francisco, Calif.	428.3	1000
KPPC,	Pasadena, Calif.	229	50
KPRC,	Houston, Texas	296.9	500
KPSN,	Pasadena, Calif.	315.6	1000
KQP,	Portland, Ore.	212.6	500
KQV,	Pittsburgh, Pa.	275	500
KQW,	San Jose, Calif.	231	500
KRE,	Berkeley, Calif.	256	100
KSAC,	Manhattan, Kansas	340.7	500
KSD,	St. Louis, Mo.	545.1	500
KSL,	Salt Lake City, Utah	299.8	1000
KSO,	Clarinda, Iowa	242	500
KTAB,	Oakland, Calif.	240	1000
KTBI,	Los Angeles, Calif.	293.9	750
KTBR,	Portland, Ore	263	50
KTCL,	Seattle, Wash.	305.9	1000
KTHS,	Hot Springs, Ark.	374.8	500
KTNT,	Muscatine, Iowa	256	500
KTW,	Seattle, Wash.	454.3	1000
KUO,	San Francisco, Calif.	250	150
KUOM,	Missoula, Mont.	244	250
KUSD,	Vermillion, S. D.	278	100
KUT,	Austin, Texas	231	500
KVOO,	Bristow, Okla.	374.8	500
KWCR,	Cedar Rapids, Iowa	278	500
KWG,	Stockton, Calif.	248	50
KWKC,	Kansas City, Mo.	236	100
KWKH,	Kennonwood, La.	261	500
KWSC,	Pullman, Wash.	348.6	500
KWWG,	Brownsville, Texas	278	500
KYW,	Chicago, Ill.	535.4	3500
KZKZ,	Manila, P. I.	270	100
KZM,	Oakland, Calif.	240	100
KZRQ,	Manila, P. I.	282	500
KZUY,	Baguio, P. I.	360	500
WAAB,	New Orleans, La.	268	100
WAAD,	Cincinnati, Ohio	258	25
WAAF,	Chicago, Ill.	278	200
WAAW,	Omaha, Neb.	278	500
WABB,	Harrisburg, Pa.	266	10
WABC,	Asheville, N. C.	254	20
WABI,	Bangor, Me.	240	100
WABO,	Rochester, N. Y.	278	100
WABQ,	Haverford, Pa.	261	100
WABR,	Toledo, Ohio	263	50
WABW,	Wooster, Ohio	206.8	50
WABX,	Mount Clemens, Mich.	246	500
WABY,	Philadelphia, Pa.	242	50
WABZ,	New Orleans, La.	275	50
WADC,	Akron, Ohio	258	500
WAFD,	Port Huron, Mich.	275	500
WAGM,	Royal Oak, Mich.	225.4	50
WAHG,	Richmond Hill, N. Y.	315.6	500
WAIT,	Taunton, Mass.	229	10
WAIU,	Columbus, Ohio	293.9	500
WAMD,	Minneapolis, Minn.	244	500
WAPI,	Auburn, Ala.	218	500
WARC,	Medford Hillside, Mass.	261	100
WBAA,	West Lafayette, Ind.	273	250
WBAK,	Harrisburg, Pa.	275	500
WBAL,	Baltimore, Md.	246	5000
WBAO,	Decatur, Ill.	270	100
WBAP,	Fort Worth, Texas	475.9	1500
WBAX,	Wilkes-Barre, Pa.	256	100
WBBL,	Richmond, Va.	229	100
WBBM,	Chicago, Ill.	226	1500
WBBP,	Petoskey, Mich.	238	200
WBBR,	Rossville, N. Y.	273	500
WBBS,	New Orleans, La.	252	50
WBBW,	Norfolk, Va.	222	50
WBBY,	Charleston, S. C.	268	10
WBBZ,	Chicago, Ill.	215.7	50
WBCN,	Chicago, Ill.	266	500
WBDC,	Grand Rapids, Mich.	256	50
WBES,	Takoma Park, Md.	222	100
WBNY,	New York, N. Y.	209.7	500
WBOQ,	Richmond Hill, N. Y.	236	100
WBPI,	Newark, N. J.	265	500
WBRC,	Birmingham, Ala.	248	10
WBRE,	Wilkes-Barre, Pa.	231	100
WBT,	Charlotte, N. C.	275	250
WBZ,	Springfield, Mass.	331.1	2000
WBZA,	Boston, Mass.	242	250
WCAC,	Mansfield, Conn.	275	500
WCAD,	Canton, N. Y.	263	250
WCAE,	Pittsburgh, Pa.	461.3	500
WCAJ,	University Place, Neb.	254	500
WCAL,	Northfield, Minn.	336.9	500
WCAO,	Baltimore, Md.	275	100
WCAP,	Washington, D. C.	468.5	500
WCAR,	San Antonio, Texas	263	500
WCAT,	Rapid City, S. D.	240	50
WCAU,	Philadelphia, Pa.	278	500
WCAX,	Burlington, Vt.	250	100
WCBA,	Allentown, Pa.	254	15
WCBC,	Ann Arbor, Mich.	229	200
WCBD,	Zion, Ill.	344.6	5000
WCBE,	New Orleans, La.	263	5
WCBH,	Oxford, Miss.	242	50
WCBM,	Baltimore, Md.	229	50
WCBQ,	Nashville, Tenn.	236	100
WCBR,	Providence, R. I.	205.4	50
WCCO,	Minneapolis, Minn.	416.4	5000
WCEE,	Elgin, Ill.	275	1000
WCLO,	Camp Lake, Wis.	231	50
WCLS,	Joliet, Ill.	214.2	150
WCSH,	Portland, Me.	256	500
WCSO,	Springfield, Ohio	248	100
WCWS,	Providence, R. I.	209.7	100
WCX,	Detroit, Mich.	516.9	2500
WDAD,	Nashville, Tenn.	226	150
WDAE,	Tampa, Fla.	273	250
WDAF,	Kansas City, Mo.	365.6	500
WDAG,	Amarillo, Texas	263	100
WDAY,	Fargo, N. D.	261	50
WDBC,	Lancaster, Pa.	258	50
WDBE,	Atlanta, Ga.	270	100
WDBJ,	Roanoke, Va.	229	50
WDBK,	Cleveland, Ohio	227	100
WDBO,	Winter Park, Fla.	240	500
WDBR,	Boston, Mass.	261	100
WDBZ,	Kingston, N. Y.	233	10
WDCH,	Hanover, N. H.	256	100
WDOD,	Chattanooga, Tenn.	256	500
WDRC,	New Haven, Conn.	268	100
WDWF,	Cranston, R. I.	440.9	500
WDZ,	Tuscola, Ill.	278	10-100
WEAF,	New York, N. Y.	491.5	5000
WEAI,	Ithaca, N. Y.	254	500
WEAM,	North Plainfield, N. J.	261	250
WEAN,	Providence, R. I.	270	500
WEAO,	Columbus, Ohio	293.9	500
WEAR,	Cleveland, Ohio	389.4	750
WEAU,	Sioux City, Iowa	275	100
WEAY,	Houston, Tex.	270	500
WEBC,	Superior, Wis.	242	100
WEBD,	Anderson, Ind.	246	15
WEBE,	Cambridge, Ohio	234	10
WEBH,	Chicago, Ill.	370.2	1500
WEBJ,	New York, N. Y.	273	500
WEBL,	New York, N. Y.	226	100
WEBM,	New York, N. Y.	226	100
WEBQ,	Harrisburg, Ill.	226	10
WEBR,	Buffalo, N. Y.	244	50
WEBW,	Beloit, Wis.	268	500
WEBZ,	Savannah, Ga.	263	5
WEEI,	Boston, Mass.	475.9	500
WEHS,	Evanston, Ill.	202.6	10
WEMC,	Berrien Springs, Mich.	285.5	500
WENR,	Chicago, Ill.	266	1000
WEW,	St. Louis, Mo.	248	100
WFAA,	Dallas, Texas	475.9	500
WFAM,	St. Cloud, Minn.	273	10
WFAV,	Lincoln, Nebr.	275	500
WFBC,	Knoxville, Tenn.	250	50
WFBD,	Philadelphia, Pa.	234	5
WFBE,	Seymour, Ind.	226	10
WFBG,	Altoona, Pa.	278	100
WFBH,	New York, N. Y.	273	500
WFBI,	Camden, N. J.	236	250
WFBJ,	Collegeville, Minn.	236	100
WFBL,	Syracuse, N. Y.	252	100
WFBN,	Bridgewater, Mass.	226	10
WFBR,	Baltimore, Md.	254	100
WFBZ,	Galesburg, Ill.	254	20
WFDF,	Flint, Mich.	234	100
WFI,	Philadelphia, Pa.	394.5	500
WFKB,	Chicago, Ill.	217.3	500
WFRL,	Brooklyn, N. Y.	205.4	100
WGAL,	Lancaster, Pa.	248	10
WGBB,	Freeport, N. Y.	244	100
WGBC,	Memphis, Tenn.	278	10
WGBF,	Evansville, Ind.	236	100
WGBI,	Scranton, Pa.	240	10
WGBK,	Johnstown, Pa.	248	5
WGBM,	Providence, R. I.	234	30
WGBR,	Marshfield, Wis.	229	10
WGBS,	New York, N. Y.	315.6	500
WGBT,	Greenville, S. C.	236	15
WGBU,	Fulford, Fla.	278	500
WGBX,	Orono, Me.	252	100
WGCP,	Newark, N. J.	252	500
WGES,	Oak Park, Ill.	250	500
WGHB,	Clearwater, Fla.	266	500
WGHP,	Detroit, Mich.	270	1500
WGMU,	Richmond Hill, N. Y.	236	100
WGN,	Chicago, Ill.	302.8	1000
WGR,	Buffalo, N. Y.	319	750
WGST,	Atlanta, Ga.	270	500
WGY,	Schenectady, N. Y.	379.5	5000
WHA,	Madison, Wis.	535.4	750
WHAD,	Milwaukee, Wis.	275	500
WHAM,	Rochester, N. Y.	278	100
WHAP,	New York, N. Y.	240	500
WHAR,	Atlantic City, N. J.	275	500
WHAS,	Louisville, Ky.	399.8	500
WHAT,	Minneapolis, Minn.	263	500
WHAV,	Wilmington, Del.	266	100
WHAZ,	Troy, N. Y.	379.5	1000
WHB,	Kansas City, Mo.	365.6	500
WHBA,	Oil City, Pa.	259	10
WHBC,	Canton, Ohio	254	10
WHBD,	Bellefontaine, Ohio	222	20
WHBF,	Rock Island, Ill.	222	100
WHBG,	Harrisburg, Pa.	231	20
WHBH,	Culver, Ind.	222	100
WHBJ,	Fort Wayne, Ind.	234	50
WHBK,	Ellsworth, Me.	231	10
WHBL,	Logansport, Ind.	215.7	50
WHBM,	Chicago, Ill.	233	20
WHBN,	St. Petersburg, Fla.	238	10
WHBP,	Johnstown, Pa.	256	100
WHBQ,	Memphis, Tenn.	233	50
WHBU,	Anderson, Ind.	218.8	10
WHBW,	Philadelphia, Pa.	215.7	100
WHDI,	Minneapolis, Minn.	278	500
WHEC,	Rochester, N. Y.	258	100
WHK,	Cleveland, Ohio	273	250
WHN,	New York, N. Y.	361.2	500
WHO,	Des Moines, Iowa	526	5000
WHT,	Deerfield, Ill.	238	2500
WIAD,	Ocean City, N. J.	250	100
WIAS,	Burlington, Iowa	254	100
WIBA,	Madison, Wis.	236	100
WIBC,	St. Petersburg, Fla.	222	100
WIBG,	Elkins Park, Pa.	222	50
WIBH,	New Bedford, Mass.	209.7	5
WIBI,	Flushing, N. Y.	218.8	50
WIBJ,	Chicago, Ill.	215.7	50
WIBK,	Toledo, Ohio	205.4	100
WIBM,	Chicago, Ill.	215.7	10
WIBO,	Chicago, Ill.	226	1000
WIBR,	Weirton, W. Va.	246	50
WIBS,	Elizabeth, N. J.	202.6	10
WIBU,	Poynette, Wis.	222	20
WIBW,	Logansport, Ind.	220	100
WIBX,	Utica, N. Y.	205.4	150
WIBV,	Henderson, N. C.	263	25
WIBZ,	Montgomery, Ala.	231	10
WIL,	St. Louis, Mo.	273	250
WIP,	Philadelphia, Pa.	508.2	500
WJAD,	Waco, Texas	352.7	500
WJAG,	Norfolk, Nebr.	270	200
WJAK,	Greentown, Ind.	254	50
WJAM,	Cedar Rapids, Iowa	268	100
WJAR,	Providence, R. I.	305.9	500
WJAS,	Pittsburgh, Pa.	275	500
WJAX,	Jacksonville, Fla.	336.9	1000
WJAZ,	Mount Prospect, Ill.	322.4	1500
WJBA,	Joliet, Ill.	206.8	50
WJBB,	St. Petersburg, Fla.	254	10
WJBC,	La Salle, Ill.	234	100
WJBG,	Charlotte, N. C.	224	10
WJBI,	Red Bank, N. J.	218.8	250
WJBK,	Ypsilanti, Mich.	233	10
WJBL,	Decatur, Ill.	270	500
WJBN,	Sycamore, Ill.	256	10
WJBP,	Buffalo, N. Y.	218.8	50
WJBQ,	Lewisburg, Pa.	211.1	100
WJJD,	Mooseheart, Ill.	370.2	500
WJR,	Pontiac, Mich.	516.9	1500
WJY,	New York, N. Y.	405.2	1000
WIZ,	New York, N. Y.	454.3	
WKAD,	East Providence, R. I.	240	20
WKAF,	Milwaukee, Wis.	261	500
WKAQ,	San Juan, P. R.	340.7	500

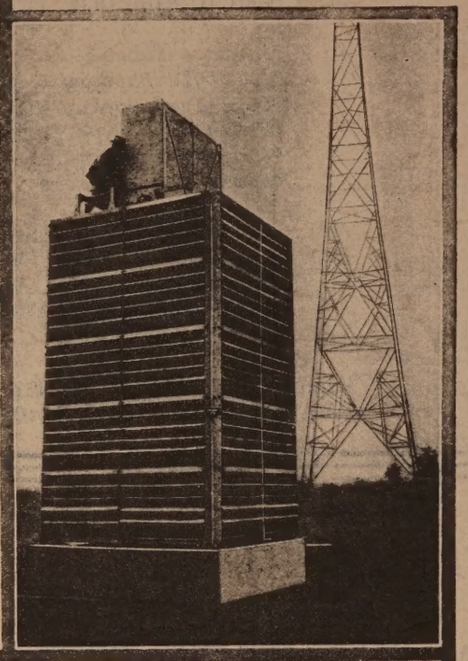
The complete list of broadcast stations, arranged for convenient reference, will appear every month in RADIO NEWS, with revisions and changes up to the closing date of the magazine. The first number after the call letters of the station is the wave-length of the station, expressed in meters; and the second number its power, expressed in watts.

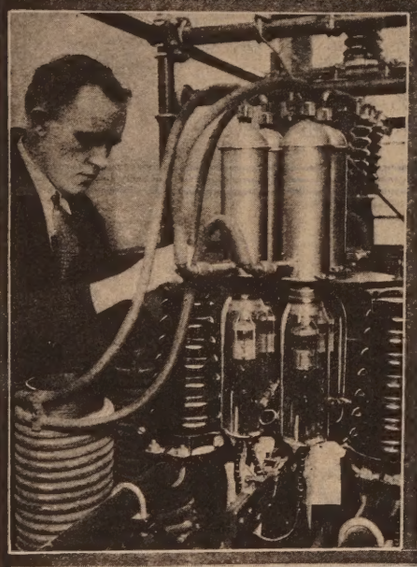
CORRECTED TO FEBRUARY 4, 1926

Views of the New Super-Power Station WJZ



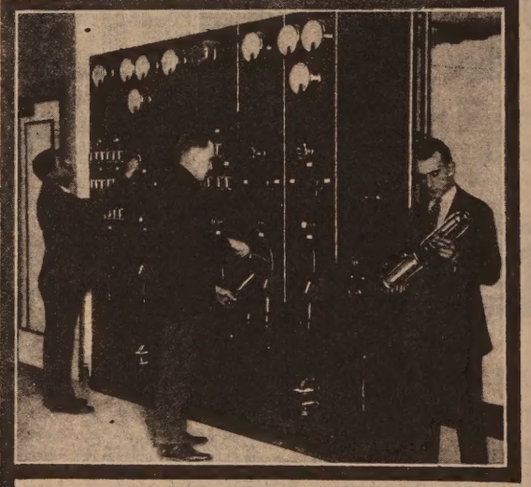
WATER COOLER FOR VACUUM TUBES. This huge water cooler, which is capable of cooling 100 gallons of water per minute, is used for the purpose of keeping the giant vacuum tubes used in the transmitter at an operating temperature. This is necessary because the great power which is needed to operate these tubes would ruin the comparatively delicate elements in a short time.

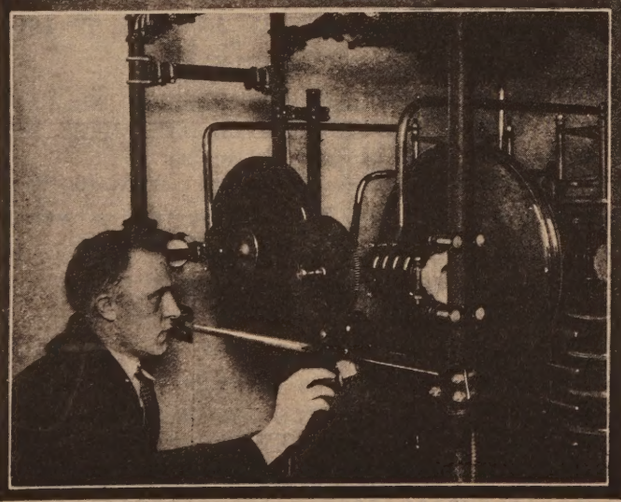




A MOTOR-OPERATED OIL SWITCH. Above is shown one of the large switches, which is located in a house of its own and controlled from the central switch board. This switch is operated by a remote-control switch, which closes a circuit starting the motor shown at the bottom of the photograph. By running the motor in the opposite direction the switch is opened.

A CLOSE-UP OF THE 10-KW. TRANSMITTING TUBES. There are 64 of these tubes used in the broadcast station WJZ at Bound Brook, N. J. At the lower left may be seen the coiled pipe which carries the cooling water to the inlet of the tube's cooler. Notice the large insulators that are necessary for this type of vacuum tube.





CONTROL PANEL OF WJZ. Every part of the complicated apparatus of the transmitting station is controlled from this one panel. The man on the right is holding one of the 10 kw. power tubes.

GIGANTIC VERNIER CONDENSERS. On the left is shown a pair of air condensers which are used for sharpening the tuning of WJZ. They operate by varying the separation between the plates and are verniers to the big condensers, the plates of which can be seen in the extreme right background. The verniers are operated electrically by small electric motors. Photos © Kadel & Herbert.

THE OLDE TYME RADIO COMPANY

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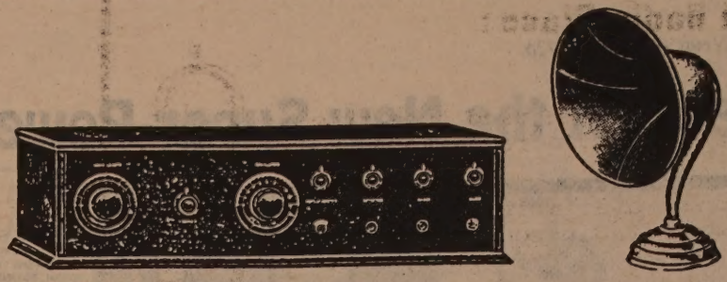

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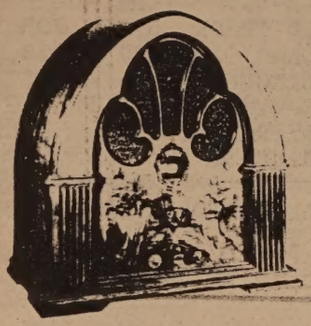

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Mailbox

Dear Sir:

In December 1930, my parents gave themselves a new table model Philco radio as a Christmas gift. It was the first year of their wedding. today they are in their 70's and have celebrated their 53rd wedding aniversity.

Several months ago I discovered the shell of that old radio in the attic at the home of my parents. My father gave it to me and I put a new finish on it. The cabinet is in great shape, but unfortunately the chassis is gone, as is all the parts, i.e., knobs, dial, speaker, etc.. All that remains is a bare shell.

I wish very much to restore this radio to working condition and give it to my parents as a gift, preferably for Christmas this year. Naturally I hope they will someday return it to me to keep as a family heirloom.

I have visited with a man in Seattle who belongs to an old time radio club. He has perhaps in excess of 100 old radios that he has restored. He has many parts, but unfortunately he doesn't have any that fit my radio except maybe some knobs and some tubes. It is his belief that a "71 chassis" will fit my shell. We believe the dial rotates left-right rather than rolling. As you might expect the cabinet is cathedral style.

My friend gave me your address as one of several. I am hoping you might be able to help me locate the parts I need to restore this old radio and provide a real surprise to someone who means much to me.

I am enclosing a self-addressed stamped envelope for your convenience, hoping I will hear from you. Please describe and quote me a price on any useable parts you may have that will fit my model or refer me to someone who might be of help.

Sincerely,
Tom Rolfs
11908 Meridian
Everett, WA 98204

Dear Mr. Cranshaw:

I thoroughly enjoyed reading with much nostalgia your October 1983 article "Radio Has Gripped Chicago" which featured the radio activities of the students attending the various Chicago High Schools and specifically the Lane Technical High School.

I happen to be one of the former students who attended "Lane Tech" in the early "twenties" and was caught in the radio craze of that era. I soon became a member of the Lane Tech Radio Club and from then on I ate and slept radio with some degradation in my other studies much to the wrath of my parents. The faculty advisor at that time was Miss Elisabeth Bergner (9 DET) a dedicated and well known radio and wireless teacher along with her other teaching abilities. The Radio Club at that time provided technical advise and a common ground for radio discussions on the various merits of radio parts and circuits. Besides building radio receiving sets, much time was devoted to the building and operating of a wireless spark transmitter. Most of the activity centered around the electric shop where a corner of the shop was set aside for the wireless station. Soon the activities of the growing popularity of the radio club overcrowded the space in the electric shop and in 1924 took over a small storage area consisting of two tiny rooms located on the roof of the school. Here was located the club's wireless station which at this time was a very low power tube transmitter. Originally, the amateur station call letters were 9AGS, later W9AQW.

In this time period anyone could apply for a radio broadcast station license and without much trouble obtain it. Quite a few amateur radio phone stations took advantage of this and applied for a broadcasting license.

The members of the Lane Technical Radio Club did just that and eventually built and operated one of the first high school broadcast stations which was on the air from 1925 to 1928 with the call letters WLTS and operating with a power of 100 watts.

Leo Gibbs, W8BHT

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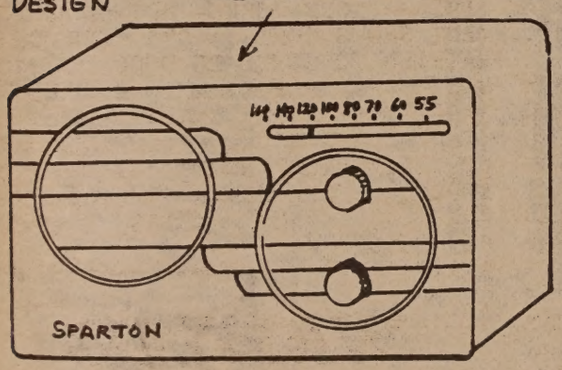

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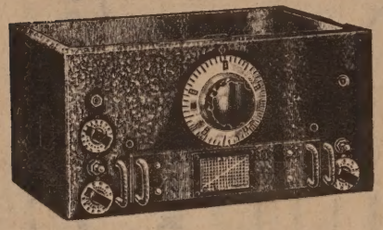

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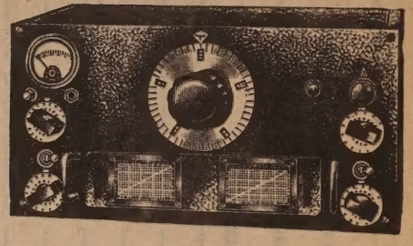

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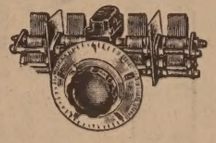
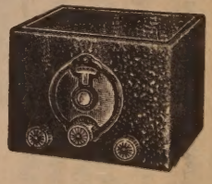


NATIONAL SW-3 RECEIVERS



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